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# (54) Recycling and waste collection

(57) Recycling bins [e.g. a domestic wheeled bin.], collection vehicles and depots have several dedicated compartments that precisely align allowing several different types of recyclable & waste to be collected maintaining segregation. The different materials may be removed by gravity or some other means [e.g. suction]. Using the same principal of precise alignment of several compartments an intermediate cradle mechanism 12 with compartments can accomodate different bins as well as sliding &/or opening doors for the retention of the materials until precise location is achieved.

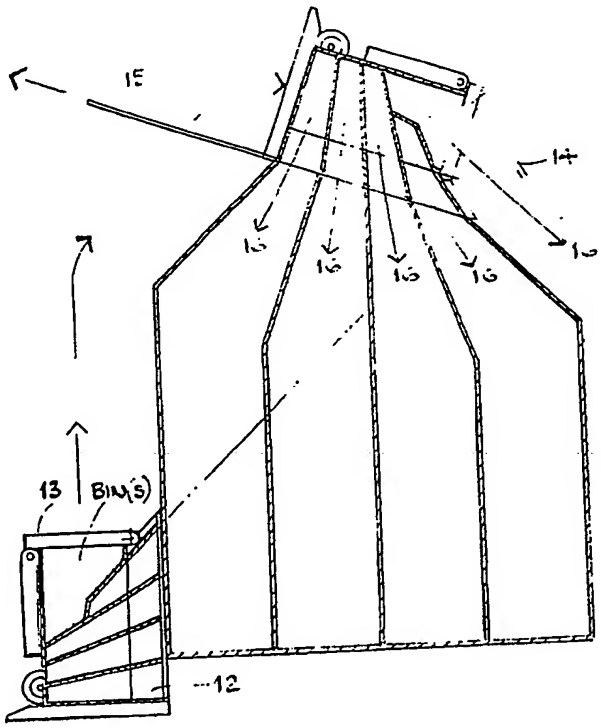


FIG 5

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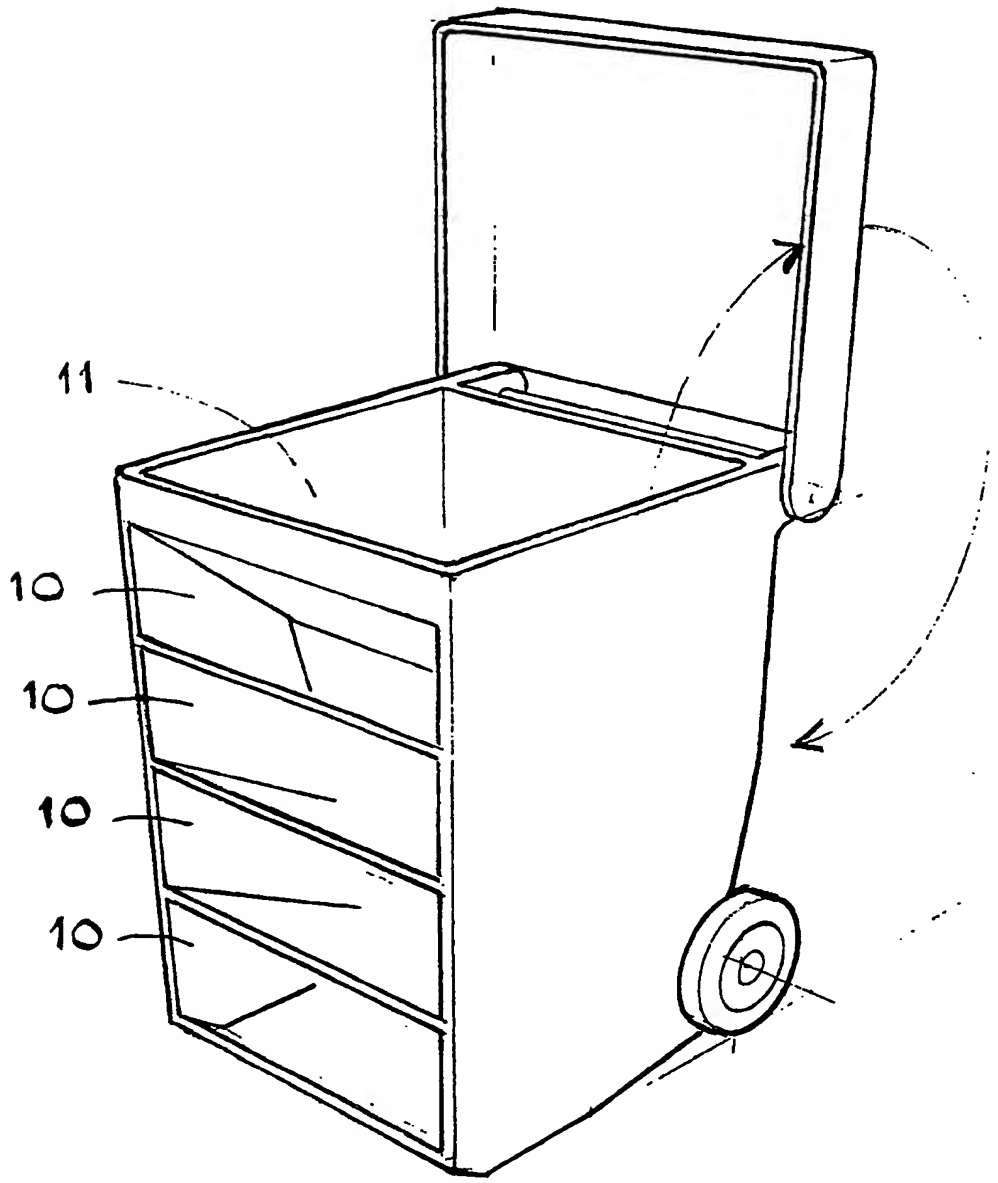


FIG 1

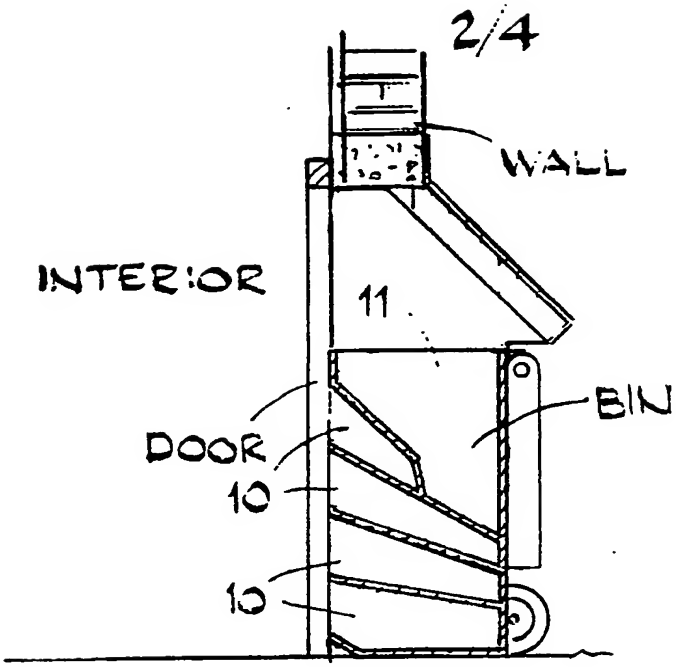


FIG 2

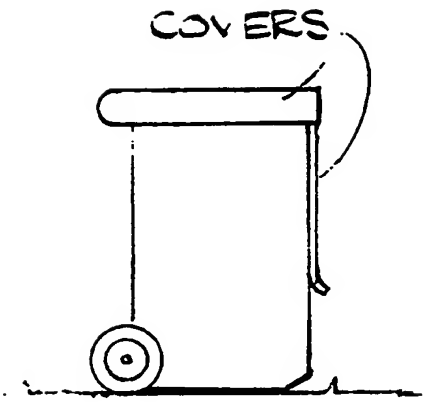


FIG 3

FIG 4

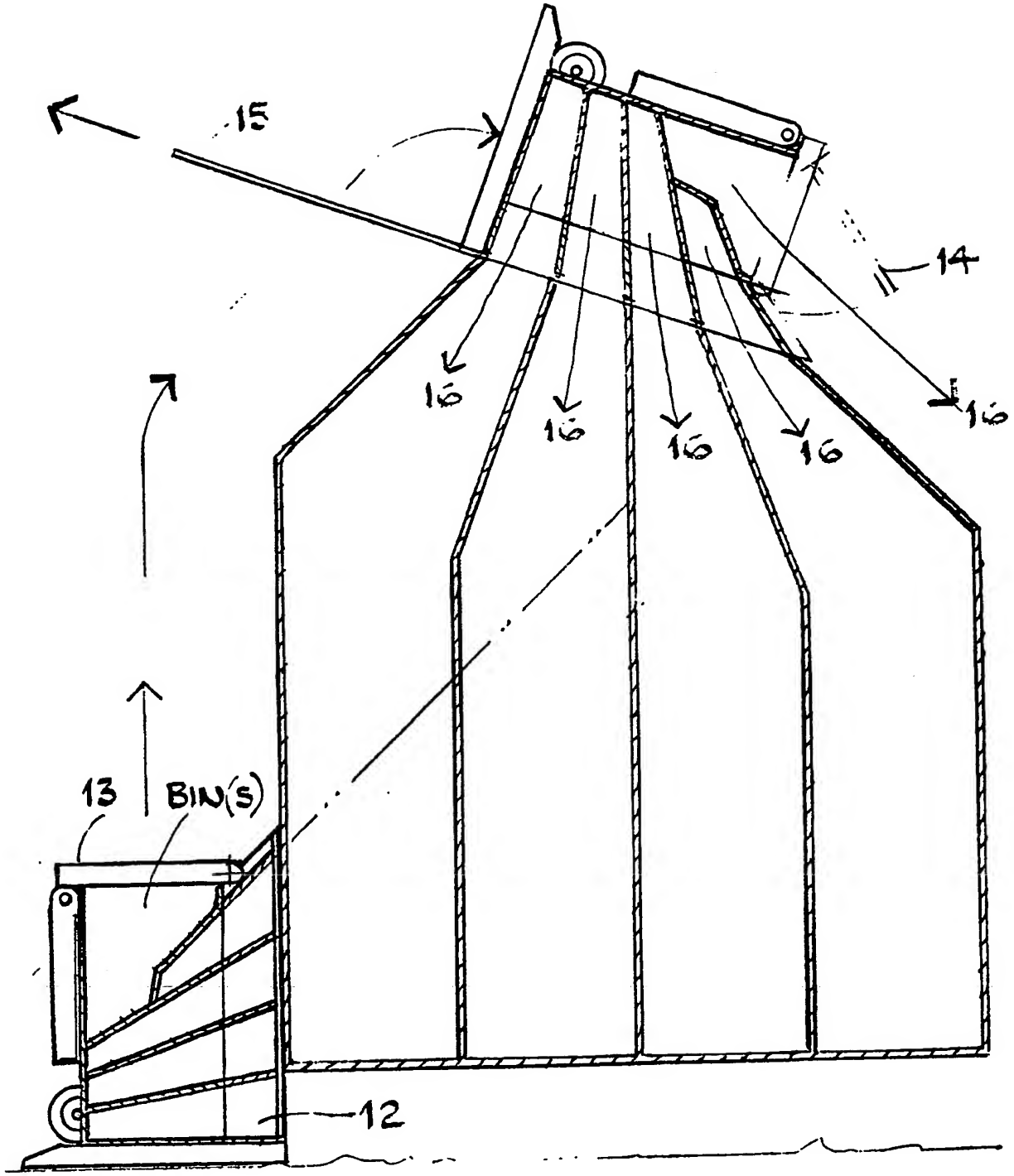


FIG 5

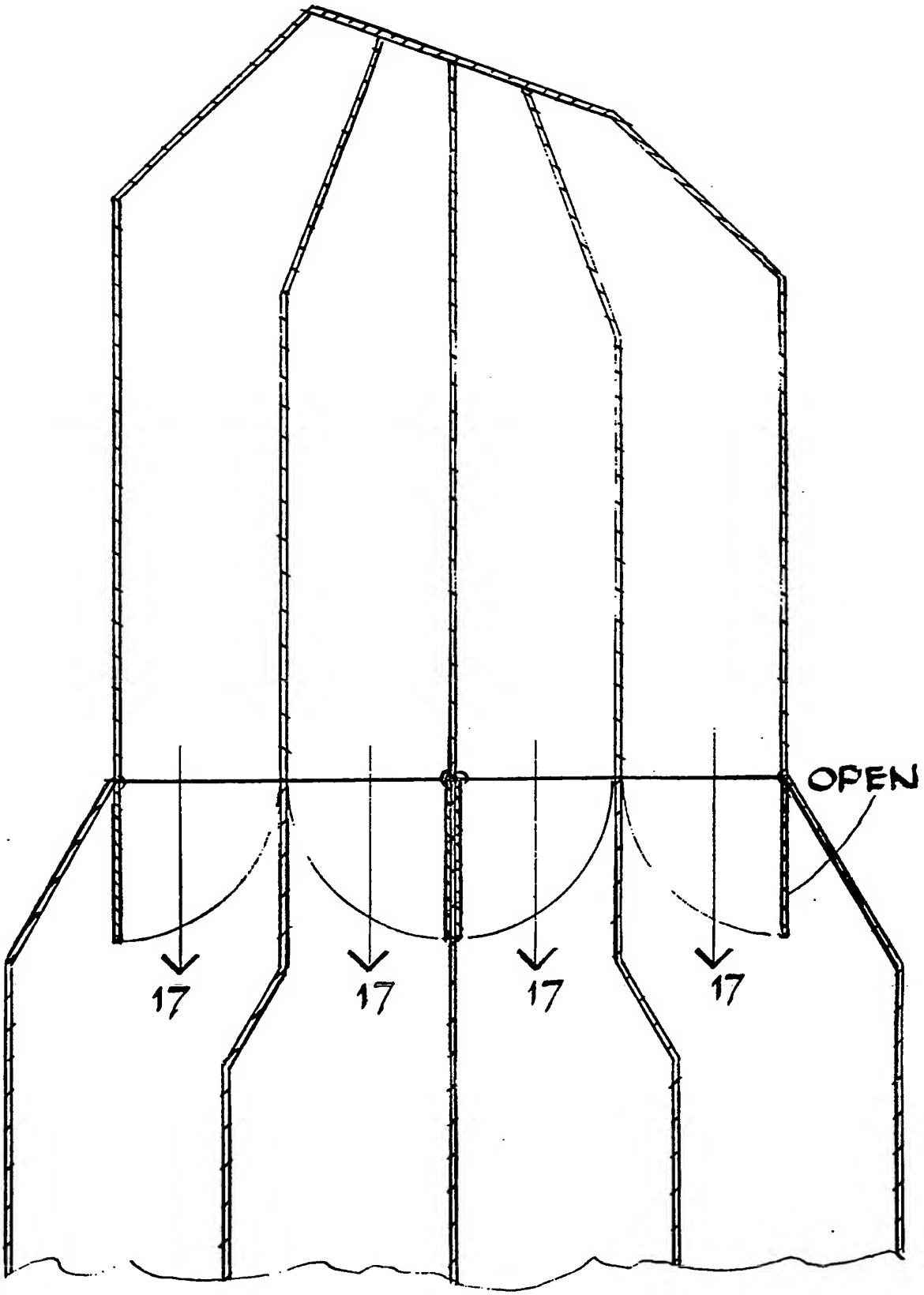


FIG 6

# IMPROVEMENTS IN THE COLLECTION OF WASTE FOR RECYCLING

This invention relates to the collection of waste and recyclable materials.

At present recyclable waste collection is inefficient, labour intensive and untidy. This is particularly true in the domestic sector. Current, long established methods of household waste collection are incompatible with Government target figures for recycling. Bolstering present levels with recycling banks / depots is subject to the inconsistency of the public and authorities alike.

This invention is a mechanised system of collecting recyclable materials and waste. It provides a reformulated alternative to the conventional refuse bin, having, in addition to a waste compartment, several dedicated compartments for recyclable materials. The compartments are designed to simultaneously dock with much larger dedicated compartments in the associated collection vehicle. The contents are removed from the bins to the collection vehicle. In the following example this is done by gravity but may be achieved by other means. The vehicle is similarly emptied at a larger collection depot by the process of accurate compartment docking. Alternatively the bins could be taken to the collection depot directly for emptying. Inherent in the design is the maintenance of segregation of the compartments contents throughout the collection and delivery process.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawings in which:-

Figure 1 shows in perspective a typical recycling bin.

Figure 2 shows the bin in section, docked on the outside wall of a building, accessible from the interior through a sealed door.

Figure 3 shows free standing bin with cover(s) in place.

Figure 4 illustrates the movement of the bin to the collection vehicle.

Figure 5 shows, in section, one method mating the bin to its collection vehicle (or depot).

Figure 6 shows, in section, one method of emptying the collection vehicle.

Referring to the bins, Fig.1, categories of recyclable materials are placed into their appropriate compartments 10. Non recyclable materials are placed in compartment 11. Collection is achieved by wheeling the bins, Fig.4, to the collection vehicle where one or more bins may be precisely docked by means of mechanism 12, and locked with arm 13. In this example the bins contents are removed by gravity, 16, thus; hinged 14 &/or sliding 15 doors keep the recyclable and general waste poducts in their compartments until the bin(s) have been moved to their correct location, that is, to a point where corresponding compartment openings of bin(s) and collection vehicle are coincident. The doors are then retracted to transfer the waste. When the vehicle has sufficient weight or volume on board it returns to the recycling depot and empties its recyclable materials 17.

## CLAIMS

1. A mechanised recycling & waste collection system, consisting of recycling bins, collection vehicles & depots all having several dedicated compartments for the different types of recyclable materials & waste. The compartments being designed to precisely align allowing the different materials to be moved from bins to collection vehicles or depots, or collection vehicles to depots maintaining segregation of the different materials.

2. A mechanised recycling & waste collection system as in claim 1 , wherein an intermediate cradle mechanism with dedicated compartments facilitates the lifting of different recycling bins as well as accommodating sliding &/or opening doors for the retention of materials until precise alignment is achieved.

3. A mechanised recycling & waste collection system as in claim 1 & 2 manufactured as an educational toy.



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